

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-000621**Date Inspected:** 15-Sep-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1600**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Ye YongJun**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower Mock-up 77 M, 89 M and 114 M**Summary of Items Observed:**

CALTRANS Quality Assurance (QA) Inspector, Alfredo Acuna was present for the fabrication of the Mock-up 77 and 114 meters elevations scheduled for this project at the ZPMC facility in Shanghai, China for the San Francisco Oakland Bay Self Anchored Suspension Bridge.

Tower Splice Mock-up 114 Meter Elevation

ZPMC, welder He Shibing was observed by the QA inspector performing welding operations on the base metal repairs after ZPMC removed the rotation devices on the skin E panel.

The QA inspector observed ZPMC performing machine beveling at the ends of the skin D upper panel, plate mp1020, subassembly MA113.

ZPMC, welder Xu Wei was observed by the QA inspector performing welding operations on the skin C lower panel at the junction of the plate mp1018 to the rotation devices. Mr. Xu appeared to be following the welding procedure specification WPS-B-P-2112. ZPMC was using the shielded metal arc welding (SMAW) process in the horizontal (2F) position with the 4.0 mm diameter electrodes designated as E7018/AWS A5.1, brand name TL-508.

The QA Inspector verified amperages, preheat and heat interpass temperatures. The QA inspector observed approved ZPMC Certified Welder Inspector Lu Jian Ping verifying welding parameters.

The QA inspector observed that ZPMC was performing air carbon arc gouging operations at the junction of the back side of the connection between the stiffeners and the skin A upper panel weld joints # 1, 2, 3 and 4.

Tower Mock-up 89 Meters Elevations.

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The QA inspector performed ultrasonic testing (UT) evaluation at the junction of diaphragm plate SA-1235 and p213, sides A & B. The evaluation of the top quarter, middle half and bottom quarter was performed with the 70° angle wedge transducer. The QA inspector performed 20 % UT verifications on the top diaphragm splice plate SA-104 at the Y location marks from 200 mm to 800 mm. The QA inspector discovered that the weld areas tested appeared to be in general compliance with AWS D1.5 2002. See UT report TL_6027 generated on this date. Note: ZPMC & ABF had not provided a weld map for the Tower Mock-up 89 meter elevation in accordance with contract documents at this time.

The QA inspector witnessed the ZPMC's Magnetic Particle Testing (MT) at the junction of the plates P1235 and P213 on the diaphragm lower section near side. The QA inspector observed MT ASNT Level II technician Cai Xin Xin performing MT verifications. The QA inspector observed that Mr. Cai's MT verifications appeared to be in compliance with the Contract documents.

Tower Mock-up 77 Meters Elevations

The QA inspector witnessed the MT evaluation on the excavated areas for the skin A panel weld joints 1 and 4. The QA inspector observed MT ASNT Level II technician Zhou Donyun performing MT verifications. The QA inspector observed that Mr. Zhou's MT verifications appeared to be in compliance with the Contract documents. However, the QA inspector observed that Mr. Zhou performed MT verifications over areas that were not ground to bright metal. The QA inspector brought this discrepancy to the attention of ABF QA inspector Huang Li with Bureau of Veritas and ZPMC QA inspector Li Xiu Yang. ZPMC ground the test areas and performed additional MT of the area in question. See digital photograph below.

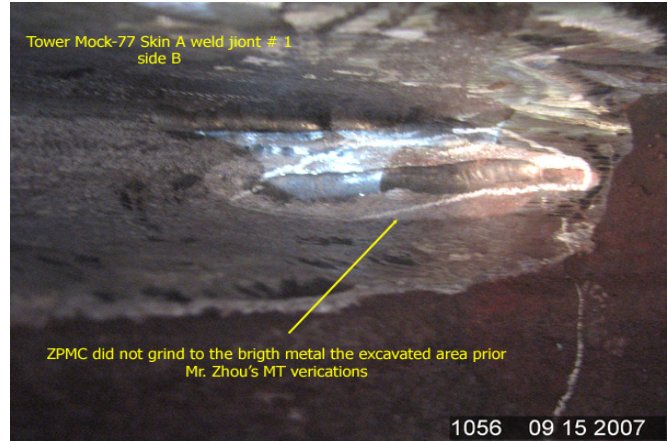
ZPMC, welder operators Zhan Binghua and Li Mingyang were observed by the QA Inspector performing welding operations on the skin panel A and E.

Mr. Zhan was observed welding UT repairs at the junction of the mp1 to skin panel A, joint # 1 following the approved welding procedure specification WPS-345-FCAW-1G-Repair. Base metal was designated as A-709 Grade 50. ZPMC was using the flux cored arc welding (FCAW-G) process in the flat (1G) position with the 1.4 mm diameter electrode designated as E71T-1 /AWS A5.20, brand name Supercored. The QA Inspector verified amperage, voltage, travel speed, preheat and heat interpass temperatures for the filler passes. The QA inspector found that the welding parameters recorded after ZPMC approved Certified Welder Inspector Ye Yong Jun and CAWI Zhu Zhong Hai appeared to be in accordance with the contract documents.

Mr. Li was observed welding areas that were found to be non-compliant by UT at the junction of the mp7 to skin panel E joint # 2 following the approved welding procedure specification WPS-345-FCAW-1G-Repair. Base metal was designated as A-709 Grade 50. ZPMC was using the flux cored arc welding gas (FCAW-G) process in the flat (1G) position with the 1.4 mm diameter electrode designated as E71T-1 /AWS A5.20, brand name Supercored. The QA Inspector verified amperage, voltage, travel speed, preheat and heat interpass temperatures for the filler passes. The QA inspector found that the welding parameters recorded after approved Certified Welder Inspector Ye Yong Jun and CAWI Zhu Zhong Hai appeared to be in accordance with the contract documents.

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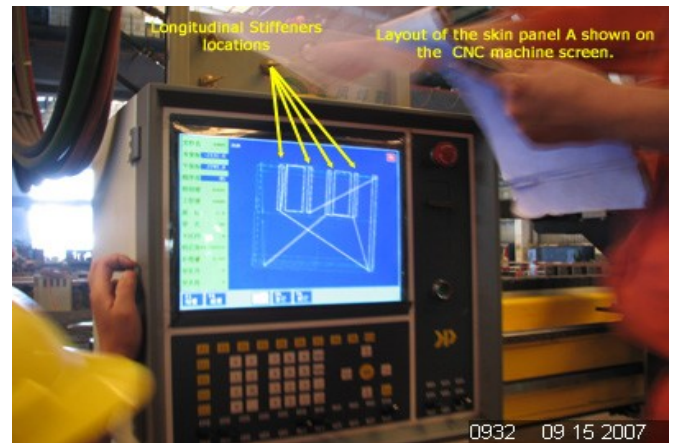
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Item	Description	WBS	Dwg No.	Status
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1	CNC Layout Skin A Lower Panel			
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The QA inspector observed ZPMC performing layout operations to the skin A lower panel with CNC oxyfuel gas cutting machine.



Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Acuna,Alfredo	Quality Assurance Inspector
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Reviewed By:	Cuellar,Robert	QA Reviewer
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